DOCUMENT RESUME

ED 098 562 CS 201 380

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TITLE PERCOG: A Progress Report and A Second Report.
PUB DATE Mar 74
NOTE 11p.; Paper presented at the Midwest Regional Conference on English in the Two-Year College (Omaha, Nebraska, Feb. 28-Mar. 2, 1974)
JOURNAL CIT Community College Frontiers; v1 n1 p5-10 Winter 1972; v2 n2 p8-12 Winter 1973

EDRS PRICE MF-$0.75 HC-$1.50 PLUS POSTAGE
DESCRIPTORS *Community Colleges; *Composition (Literary); Perception Tests; *Reading Tests; *Remedial Instruction; Remedial Reading; *Teaching Techniques; Visual Perception; Vocabulary

ABSTRACT

These two reports discuss remedial classes at the community college level. The first describes a series of tests that had been administered indicating the students had both perceptual and visual problems which interfered with their learning: the Peabody Picture Vocabulary Test, the Purdue Perceptual Motor Survey, and the Frostig Visual Perception Test. The second paper relates the successes and problems of teaching composition to remedial students through the use of diagrams, advertisements, and cartoons. (HOD)

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PERCOG: A Progress Report

Karl K. Taylor

James M. Jones, eighteen years old and a recent high school graduate, is enrolling this fall at a community college somewhere in the state of Illinois. Because he ranked in the lowest quarter of his graduating class, because he scored 15 or below in English on the American College Tests, and because his high school grades were very low, he is a prime candidate for remedial help in English. He isn't a weak writer; he's a terrible writer. He doesn't know the difference between a comma and a semicolon, between a fragment and a complete thought, between a topic sentence and supporting evidence. And he can't spell. Although many average students have these problems in writing, Mr. Jones has more of them than most do, and his errors are more illiterate than illogical. Perhaps one of the most conspicuous signs of his inability is that almost incomprehensible second-grader scrawl. What kind of remedial help will he receive? It will either be grammatical, emotional, or practical.

For years English teachers have looked at such students as Mr. Jones and suggested that he study grammar, complete exercises in programmed texts, and until very recently, diagram some sentences. The advocates of this approach said, if the student can't write, we must "begin with the basics"; we must teach him about grammar either in a conventional tracked system (no longer fashionable) or in a writing clinic set up to help the student on an individualized basis (currently fashionable). In other words, no matter what method was used – the classroom or individualized instruction – this "getting back to the basics" meant a heavy stress on grammar.

The basic problem with this emphasis was that most studies have shown no relationship between a student's knowledge of grammar and his ability to write. Other shortcomings included dullness (the students detest it), repetition (students have studied grammar every year in school), and a sense of overwhelming ignorance (most texts deal with every conceivable grammatical or mechanical problem). Perhaps the most significant evidence that this approach didn't work was that too few students actually improved; James Jones would probably write no better at the end of the course than he did at the beginning. He was, according to some teachers, too ignorant or too poorly motivated.

"That's it," other advocates said. "We must forget grammar and concentrate on motivating him." So some teachers began using "now" readers dwelling on controversial, contemporary problems. If they could arouse Mr. Jones' interests in the real issues of the day like race relations, abortion, and the like, these teachers felt they would be able to remedy Mr. Jones' problems. No matter how logical the approach may seem, for most people the method was no more successful than the first one. Students had fun, but in the end, they didn't write any better. Too often students were provincial and were simply uninterested or uninformed about the subject; they lacked sufficient background to discuss or write about the issues; and teachers invariably asked the students to write argumentative papers which were beyond their ability. Finally, this method was probably unsuccessful because nothing was taught directly about writing; enthusiasm could not be translated into correct prose.

While teachers were arguing about the merits of these two approaches, still others were contending that students needed more practical assignments. They needed to learn how to write business letters, to compose memos, and to fill out forms. If the student saw the practicality of the assignment, according to these advocates, Mr. Jones would be properly motivated because the assignments were not artifical, irrelevant. For some students this job-related English training was probably quite appropriate, but it assumed that the student was terminal, that he would always be a mechanic or a tool-and-die maker. That may or may not always be the case. The problem with this approach was that it virtually ignored the serious grammatical and mechanical problems and that it relegated the student to a terminal education and occupation.

Having used all these approaches with varying degrees of failure, I began seriously to evaluate (in the fall of 1971) how writing could or should be taught to the genuinely weak writer. My immediate problem was to determine how I was going to deal with a class of twenty-seven students who scored in the lower 10 percent on the ACT composite, who easily ranked in the lowest quarter of their high school graduating classes, and who read anywhere from the fourth to the eight grade level. I wanted to "get back to the basics." Drawing a horizontal line representing a continuum, I theorized that point A represented where we begin to learn how to write and that point B represented where we know how to write. Point X would indicate where grammar instruction usually fell in a student's language development.

A ——————— X ——————— B

Instead of exploring the usual sources, I began studying some of the new learning theories, particularly the work of Piaget, the Swiss psychologist, J. P. Guilford, author of *The Nature of Human Intelligence and Structure of Intellect*, and N. C. Kephart, the author of *The Slow Learner in The Classroom*. And I began to read about the work of Carl H. Delacato, who contends that, unless a child first crawls before he walks, serious

Source: Community College Frontiers, Vol. 1, No. 1, Winter 1972.

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academic problems will develop later. In other words, I began reviewing a child's intellectual development through a kind of academic rear view mirror. At the same time, I discussed my theory with a number of authorities on learning: psychologists, special education instructors, optometrists, and even kindergarten and primary teachers. In retracing the steps in intellectual development, I theorized that my students had not learned many things which took place between A and X on the diagram, somewhere on the perceptive-cognitive steps in intellectual development. (Hence, my title.) In short, I believed that "going back to the basics" – to grammar – was not sufficient. For some we must go back further.

Unfortunately, coming to this conclusion was much more difficult than what I have probably made it seem. In fact, the conclusion came inductively – after I had begun that remedial class mentioned before. Let me share those experiences. On the first day, I brought twenty different designs to class; these diagrams (see page 10) were geometric and varied in difficulty from the simple to the complex. After I explained who I was and identified the course, I selected what seemed the simplest diagram and asked one student to go to the chalk board. I then showed the diagram to the rest of the class and asked them to describe, to the student at the board, how to draw the design. When it was completed, I repeated the process with three or four more diagrams which became steadily more difficult and which called for three or four different students at the board. During the second step in the sequence, I used a similar procedure – one diagram, one person at the board – but this time only one person from the class was allowed to help the student at the board. Again, I repeated this method, covering three or four diagrams and using three or four more different students at the board.

In short, during the first week of class, we discussed the first ten diagrams, and then we began to relate these drawings to composition. Accordingly, the students' first assignment was to draw a diagram of their own and to describe in words how that diagram was drawn. (The design was submitted with the paper.) I carefully explained that their work would be evaluated for only one quality – clarity. Nothing else would be marked; grammar, mechanics, punctuation or spelling would be ignored. And everyone completing the assignment would pass. If a paper were clear, the student would receive an A, a B, or a C; the highest grade would go to the student drawing the most difficult diagram and explaining it best. If a description were unclear, the student received an "OK – revise," not an "unsatisfactory." The student continued to revise until his work was clear enough to deserve an A, B, or C. With this first assignment, not a single first draft was considered clear, more my fault than theirs because I had not anticipated their problems and taught them all they needed to know. When the first draft was revised, roughly one-third of the class received a passing grade. When the themes were revised for a third time, most students were able to write clear papers. Roughly 20 percent of the class had to revise this first assignment as many as five times to make it acceptable.

When this first paper was turned in, however, it was not simply marked and returned to the student. During the third and fourth class periods, I took all the bad papers and had their authors read them to students who tried to draw the diagrams at the board. What was especially encouraging about this approach was that students were immediately able to see why their writing was not clear. If the student at the board could not draw the design, the paper was obviously unclear. If you have ever had to tell a student that something he has written is incomprehensible, you can appreciate the situation. Students smiled, not frowned, when someone showed them how their writing was vague. They understood, and that is an unusual accomplishment in an English class.

After the first paper was written, the students were asked to draw a second diagram and to prepare another short paper describing how to draw it. In class time we worked with some of my more difficult designs to give them still more practice, and we added two steps to the process. With the third step the situation or process was altered slightly – one diagram, one student in the class giving directions – but now the student drawing the design could ask no questions. To make our writing clearer, we arrived at these conclusions:

1. Each paper had to begin with a sentence which gave the drawer some idea of what the whole diagram looked like. This is known, of course, as the thesis sentence, but the term was never used in class.

2. Since many students left out steps in their description, we decided that it would be best if the student drew a series of incomplete diagrams, leading to a complete one. Thus, we could follow the procedure more easily and no steps were left out. Soon thereafter, we decided that each step should be contained in a single paragraph for clearer writing. The result was an inductive approach to teaching paragraphing.

3. To make our descriptions clearer, we also decided that most of the sides, lines, intersection points and the like should be numbered or lettered. Moreover, when describing circular figures, we compared positions on the circle to places on a clock. (See diagram numbered 11). For instance, it is much clearer if the writer can say that the drawer is to extend a line from the nine

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o'clock position to the center of the circle and from there to the five o'clock position.

4. We also discovered that, in the more difficult diagrams, the reader often got lost in all the details. Accordingly, we decided that the writer should draw the incomplete diagram adjacent to the paragraph describing that step and that the writer should summarize what the diagram looked like when each step was complete.

The result of using these four suggestions was that most students did not have to revise their papers more than once; their writing was clearly showing improvement. Even though some students were required to revise their papers several times, they did not seem discouraged, apparently because they knew that they still had a chance to improve.

At this point, roughly the fourth or fifth week, I felt we were ready to try the fourth step with the diagrams. Therefore, I selected what I thought were the five most difficult diagrams, and again I chose one student to go to the board to draw each design. Instead of using just one student to give directions, however, I asked the entire class to help, but now they turned their chairs around so they faced the rear of the room and were unable to see what the student at the board was drawing. Gradually I tightened the situation: the student at the board couldn't ask any questions, and only one person in the class could describe the diagram. At first the class had problems as might be expected, but by the fifth diagram, which is really tough, they performed magnificently. While working on this fourth step, we found it extremely helpful if the person giving the directions drew the diagram himself at his desk and if he continually summarized what the diagram should look like after each step.

By this point (near the end of the fifth or sixth week), everyone was tired of the diagrams, and I felt that we needed to use a different and slightly more difficult subject for the papers. Therefore, in my next assignment I asked the students to select a cartoon which appealed to them and to describe it – what was in the foreground, what was in the background, etc. After their papers were submitted, evaluated, and returned, they were asked to revise their papers and to add more information to their description. This material was to include the audience to whom the cartoon was directed – family, working class, male audience, female audience, and the like. They were also asked to explain the subject matter or purpose – political, social, economic, etc. – as well as to evaluate what made the cartoon funny.

Generally speaking, I found the assignment was a failure for several reasons. First, the jump from the diagrams to the cartoons was much more difficult and complex than I had anticipated. For instance, I discovered that – although students could describe the people, places, or things in the cartoon – they did not or could not generalize about them. They could not, for example, conclude that a cartoon containing a middle-aged couple and a teenage boy might represent a family. To the students, the figures were a man, woman, and a boy; they did not or could not evaluate them any further. Second, I discovered that they could not explain what made the cartoons funny. Although I realized that humor was quite sophisticated, I felt that they would choose cartoons which they could understand. That, apparently was not true. For instance, one girl chose a cartoon containing a dog, his owner, and a stranger; the dog is standing near the stranger, whose hat is in the animal's mouth. The caption, the words of the owner, read: "Apparently, you [the stranger] said something that offended him." When the girl tried to explain the humor, she replied with a four-word fragment: "Because of the dog." Obviously the girl's problem was more than an ignorance of grammar; it was directly related to her ability to think. She was either unable to put her thoughts into words or unable to see the implications of the figures in the cartoon. However, no matter what the precise problem was, starting with grammar was too advanced for this particular student. As you can see, we moved from pure description to evaluation or analysis, more difficult skills but necessary ones if the student is to succeed in higher level English courses. At least part of the student's lack of success was the result of my failure to teach her how to evaluate, analyze, or interpret.

For the next assignment, which in two different forms took the remainder of the semester, I asked the students to select an advertisement and to evaluate it as they had the cartoon. In this situation, however, they not only described it in the first draft, but they also had to analyze it, again making the assignment a bit more difficult than the previous one. In analyzing the advertisement, they were to touch on these aspects: to whom did the ad appeal, what were the advantages of buying the product, how was the appeal to buy made, what happened to the purchaser when he bought the product (i.e. he achieved status "by moving up to an Oldsmobile"), and what types of appeal were used. For some unidentified reason, the students wrote better on this assignment than they did when describing and evaluating the cartoon. Several psychologists have suggested the reason was that the students were simply more familiar with advertisements than the cartoons. Moreover, the element of analyzing humor was not present in the advertisement. The last assignment was a continuation of the previous one. Originally, let's say that the student selected an Oldsmobile advertisement to describe and evaluate. Then, in this last assignment, I asked him to describe another Oldsmobile ad, but it had to be 20 years old or older. When he was finished, I asked

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him to combine these two advertisement assignments and write a paper in which he compared and contrasted them. The result was another batch of papers in which the description was adequate but the analysis inadequate.

At the end of the semester, I began to evaluate my work and made these observations about the diagrams.

1. Perhaps as many as 20% of my students were unable to determine their left from their right. Although this finding is not unusual, the percentage is larger than experts would expect.

2. Many students, when they saw diagram number 1, could see no pattern whatsoever. For instance, the brighter students saw two capital E's back to back or a capital "I" with a horizontal line in the middle. The weaker students could see nothing more than three lines, apparently devoid of any form or pattern. The same students had difficulty understanding the difference between a topic sentence and supporting evidence.

3. Obviously, some students needed help with geometric vocabulary, like length, height, horizontal, width, vertical, triangle, rectangle, etc.

4. Circular shapes presented special problems for students who had to describe them.

5. Students needed help in learning how to generalize about a diagram, how to express what the diagram looked like.

6. Generally speaking, I would say that the diagrams were too difficult for one-third to one-half of the class.

About the cartoons and advertisements, I made these observations:

1. The jump from the diagrams to the cartoons was too great.

2. Discussing the humor in the cartoons was too difficult.

3. Perhaps the students were being asked to perform too many tasks at one time.

4. The order of the assignments – cartoons followed by advertisements – would have to be reconsidered.

Despite all these observations and findings, I concluded that there were many advantages to the approach if some of the problems could be solved.

1. Perhaps the most significant advantage was that the students liked to write about and discuss the diagrams.

2. Although many textbooks proclaim that they teach the student how to think, few – if any – actually accomplish this aim in any direct way. Working with these diagrams very definitely required the students to think and to determine how to do so clearly.

3. Since students enjoyed what they were doing, I believe that they were less inhibited than they normally would be with a conventional approach. I had many spontaneous outbursts; one student interrupted another to give a better way of describing a diagram.

4. Using this approach, I accidentally discovered a way of teaching extemporaneous speech in an English classroom.

5. Students immediately saw whether they were successfully or unsuccessfully communicating to a reader or listener. A peer, rather than the teacher, became the evaluator; the person at the board could or could not draw the diagram described to him.

6. Since the emphasis was on explaining the diagrams and not on grammar, the students immediately saw the point of the class. When a colleague asked one of my weaker students about the purpose of the course, the young man responded, "We're really learning how to communicate better, orally and in writing."

7. Using the diagrams made the class much more active than most; students were at board drawing, constructing the diagrams at their desks as they heard the instructions, or giving directions. The educational process was active and practical, not passive and abstract. No one fell asleep.

8. The students became much better planners; they were beginning to anticipate the problems which confront their readers or listeners. In short, they began to think, and to think precisely. Again when a colleague asked the students to evaluate the class, they couldn't quite believe how tough it was to communicate accurately.

9. Not surprisingly, this approach had a great deal of appeal for the mechanically oriented males, especially those going into

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vocational-technical fields. These students have always been hard to reach because our materials have not been interesting to them. The diagrams made them aware of the value of careful communication.

10. Finally, using my grading and revision policy, I was inductively leading students to the problems of grammar. The inductive approach seemed much better because the students were not taught something until they needed to know it. Then they remembered it. For the most part, much education is presented deductively before a need-to-know is established.

My list of problems with the approach is embarrassingly short. The shortness is embarrassing because it implies that I had fewer problems than I actually did and because I know that many more problems exist which I have simply overlooked or failed to understand.

1. Experience shows me that the diagrams are not in the proper sequence – from the simplest to the hardest. I must rearrange them.

2. I need more and different kinds of diagrams – more circular forms, more figures, numbers, and letters hidden in them.

3. I need to be able to evaluate how difficult a given task is for the students.

4. More work has to be done on bridging the huge gap between the diagrams and the cartoons.

If Mr. James M. Jones comes to Illinois Central College this fall, he will not be placed in the traditional English class which could be classified as grammatical, emotional, or practical. Instead, he will be taking PERCOG. In cooperation with the George A. Zeller Zone Center, a mental health facility in Peoria, Illinois, Mr. Jones will first undergo a series of screening tests to determine if he suffers from any serious visual or auditory problems. (The student, however, will never be told that the personnel normally work at a mental health center.) If he does have problems, therapy will be offered at the center or at the College. Yes, he will be writing about diagrams, cartoons, and advertisements, but he will be better prepared to do so. As I presently visualize the class, the diagrams will fall somewhere near the middle of the semester. If the diagrams were too difficult for perhaps 50% of last year's class, we must do something simpler first. What will we be doing? All my research indicates that we must deal with skills which youngsters learn from kindergarten through fourth grade. These skills are the perceptual-cognitive ones, necessary for logical thought. Authorities have helped me theorize that these students have learning disabilities very similar to those of children eight or ten years younger. With more sophisticated materials, we are going to observe and practice, for instance, chronological order. As a prelude to written, formal instruction in organization, we will be classifying objects. To teach analysis, comparison, contrast, and the like, we will be viewing slides and films to which students will be asked to respond orally. We will be trying to improve visual and auditory memory by recalling lists of words or numbers. In short, although he is eighteen years old and a high school graduate, James M. Jones will be studying reading readiness at Illinois Central College.

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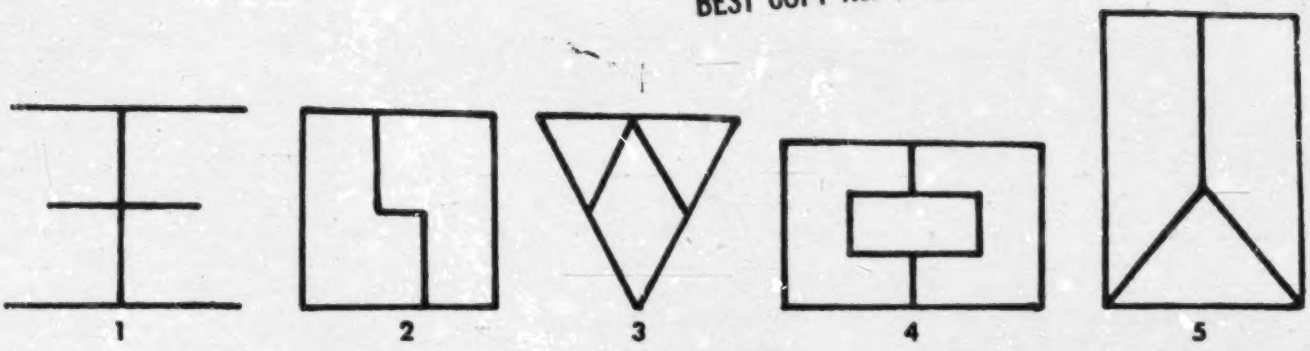

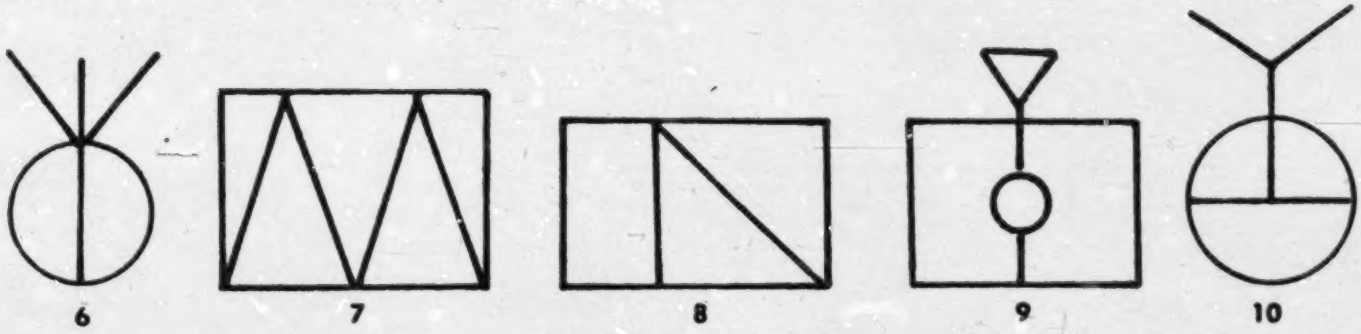

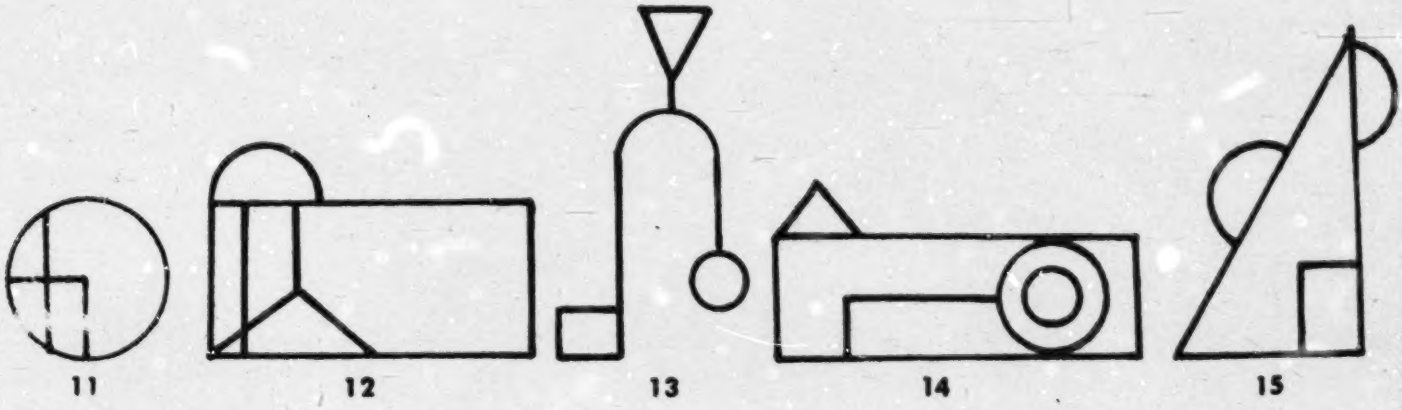

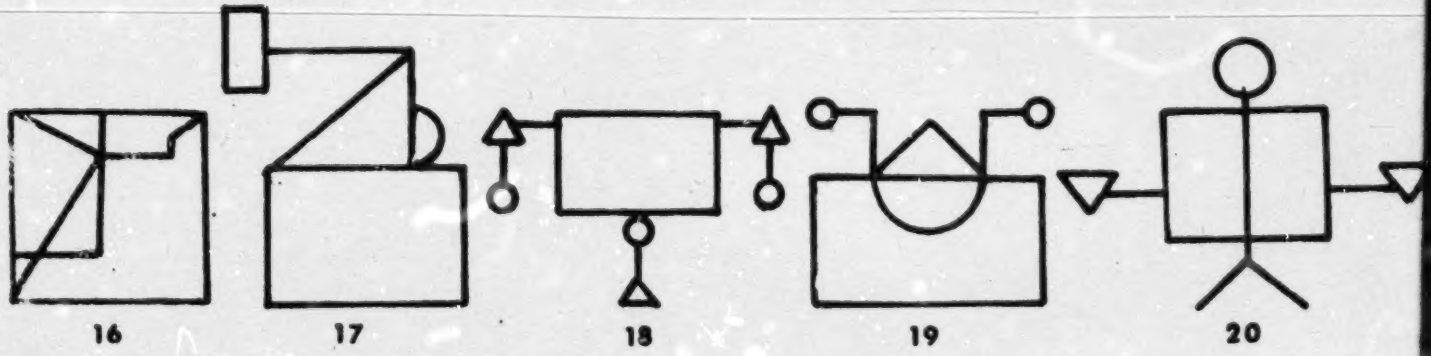

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percog:

a second report

KARL K. TAYLOR, English Professor and Coordinator of Developmental Program, Illinois Central College

I was probably six or seven years old when I first met a person who did not speak the English language. It was years ago when my parents and I were vacationing in Canada; we had just stopped for gasoline in a small town several hundred miles from Montreal. As the attendant was filling the tank, I rolled down the window and asked him the distance to our destination. To my suprise I couldn't understand his response, the broken English and French which the man was speaking. Patiently he tried to explain that he did not know my language; I couldn't really grasp the meaning of a communication barrier because I was so young and because I had always been insulated from languages other than English. In a moment of insight I leaped beyond the complexities of linguistics to arrive at a revolutionary method for overcoming this barrier—by speaking very slowly and *shouting*. Needless to say, from that particular attendant, I never learned the distance to Montreal.

When faced with disadvantaged students or low-achievers, we educators have been shouting, in a sense, for years. At least we have not been listening. Because a student was unable to perform the tasks we expected of him, because he was leaving (or disappearing from) our courses without apparently improving on any of the skills we were teaching, we were inclined to place the blame or responsibility on the student. We assumed either he had a poor attitude (for which we took no responsibility) or he was not intellectually capable of handling the work, a situation over which we had no control. Although the community college was designed to assist these disadvantaged students, I doubt whether a very large percentage of students has been successful in college; many teachers still look upon failure as primarily the students' responsibility and we educators have too seldom taken the time to examine our methods. We have failed or refused to consider our role in the student's failure. We have failed to consider whether our methods or approaches are involved in or related to the students' failure. For instance, if a student has gone through 12 years of instruction before he reaches us, how can we assume that repetition of the same kind of instruction or the use of the same instructional techniques will be any more successful now than they were before?

If the students' problem was a poor attitude toward school, perhaps an improved self-concept in college or simple maturation will result in success for the students who have only known failure previously. However, there are other students who do not have poor attitudes and who do not succeed in college for other reasons. Do all these students fail because they don't have the ability (obviously some do) or because we have overlooked something; Could the problem be more complicated than student attitude or ability; Could something else be preventing these students from learning what others have mastered years before?

As I hear these "universal truths" (student ability and motivation) used with such ease, I'm haunted by the voices on the Bayer Aspirin commercial: "The world is flat! The world is flat!. . .If men were meant to fly, they would have wings. . ." With a puzzled mind, I began to reconsider what sort of remedial work in English should be offered to the community college, and I explained some of my work at Illinois Central College (a public community college located in Peoria) in the winter, 1972,

Source: Community College Frontiers, Vol. 2, No. 2, Winter 1973.

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issue of *Community College Frontiers*. In that article, I expressed my view that we educators were making too many assumptions about these students, that with much of our instruction, we were treating symptoms rather than causes. To substantiate my theory, I mentioned that we were planning to administer a battery of tests in the fall of 1972, and the results, in some instances, have borne out what I expected. Community college remedial technics may be as primitive and naive as those of the youngster trying to communicate with the Canadian service station attendant.

During the fall of 1972, the college secured the services of two testing agencies and a coordinator for the project. The Peoria County Health Department agreed to administer vision and auditory tests, while Zeller Zone Center—a state mental health facility in Peoria— was responsible for several different types of tests. They were concerned with speech articulation, with oral vocabulary (the Peabody Picture Vocabulary Test), with perceptual motor problems (the Purdue Perceptual Motor Survey), with dominance, and with visual perception (an altered version of the Frostig Visual Perception Test). To supervise all the testing, the college hired a consultant who had helped design a battery of tests for the local Head Start Program. The purpose of all these evaluative instruments was to determine if this particular group of developmental or remedial students had problems which prevented them from learning, to determine if they had learning disabilities which could not be overcome simply by increased interest in education or an improved attitude toward it. In short, we wanted to learn if these students had characteristics which set them apart from their peers who were enrolled in college transfer courses; and if so, we wanted to learn what kind of instruction was necessary to meet the needs of these underachievers.

Vision tests

If you are like most instructors of remedial courses, you have always assumed that students could see by the time they reached your class. This assumption is extremely questionable. Since testing those students who wore glasses might be considered unethical, our consultant suggested that we test only those who did not wear glasses. Because

–Illinois Central College photo by Jim Mathews

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we had neither the time nor the facilities and because the consultant did not feel that many of our students would have visual problems, the tests were short and not very thorough. Our purpose was to screen the students for gross problems and to direct them to where more complete examinations and care were available. If a student failed an exam, he was referred to the school nurse who retested him. If he appeared to need visual care, he was later referred to local doctors; and if the student could not afford the examination or prescribed care, local service organizations were contacted to help him.

Soon after the testing began, a pattern of similar ailments began to appear. The most common problem was binocular coordination, the failure to make both eyes function smoothly together. This particular condition is more directly related to learning problems than to sharpness of vision and was also noted by the personnel from Zeller who found students having trouble tracking. The students had difficulty following an object moving from left to right in front of their eyes and from a distance to within a few inches from their eyes, an obvious problem when students would be called upon to read for any length of time or to read something from the chalkboard. Is it any wonder that they don't like to read. We even discovered a young man who was completely blind in one eye, the result of an air gun accident years ago, yet the student had never gone to a doctor for an examination or treatment. The results of the testing, then, were quite surprising because we had not anticipated such a large failure rate. Of the 52 students in the experimental group who did not wear glasses, 29 students or 55 percent failed.

In the midst of our work, when we discovered so many students were failing the exam, the consultant concluded that it would be wise to test those students who wore glasses, assuming many of their corrective lenses would not be current. Also, he felt that a control group would give us some idea of how universal the problem might be in a more "normal" population.

Those remedial students who wore glasses presented us with some unusual problems. Many of them were wearing lenses that had been prescribed years before and that were no longer current. It was not uncommon to find some who had not had their eyes examined for four or five years. As a result, some students were wearing glasses which did not fit them properly or which were no longer current. In other cases, they no longer would wear their glasses—even though they needed them—because the frames did not fit. Another problem with these students was that they did not like to wear glasses because they felt their looks were affected. The teachers in our program continually had to prod one young man to wear his although his left eye wandered noticeably, and he obviously could not see well. So, even though we determined that glasses were needed, many students were reluctant to visit a doctor or to wear the lenses.

Specifically, of the 29 students in the experimental class who wore glasses, 11 (or 37 percent) were encouraged to have their lenses checked because they did not appear to be current. Such visual difficulties were not common in the control group; no one failed the exam, but the sample was too small (only 10 students) to draw a valid conclusion. In short, the vision tests indicated that almost 50 percent of the Developmental students (40 out of 81) had some kind of vision problem.

After making these discoveries, we began wondering how effective public health departments are in detecting vision difficulties when the children are in elementary and secondary schools. The stumbling block is staffing. For the 35,000 children in the Peoria County public schools, only one coordinator and three examiners were available in the fall of 1972. The task is so huge that the public health department estimates that it is unable to examine a student more than twice during elementary or secondary school—sometime near kindergarten and once around fifth grade. The department is unable to test many junior-high or high school students even though the greatest natural changes in the eye take place during puberty.

Auditory testing

Again, Peoria County Health Department was responsible for the auditory testing, using portable audiometers which are designed to detect gross problems. If a student failed this test, he was retested by the school nurse. If he failed a second time, he was referred to the Hearing and Speech Unit at Zeller where he

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would undergo more thorough tests, and arrangements would be made for possible care. Initially, only four students out of 77 failed the exam. Later, when the school nurse retested those who had failed originally, she found no evidence of hearing loss; and no one from the control group failed the testing.

Speech Testing

Personnel from Zeller Zone Center were responsible for administering speech examinations to ascertain whether or not any of our students needed speech correction. Those with deficient speech were referred by the school nurse to Zeller, where further testing was offered and arrangements were made for therapy. Of the 77 students tested, three failed; but in the control group all passed.

Peabody Picture Vocabulary

Zeller was responsible for giving the Peabody Picture Vocabulary Test which is designed to evaluate a student's auditory, rather than reading, vocabulary. Consisting of a booklet of pictures, four per page, the test is supposed to be without cultural bias and assumes a student may be able to use certain words orally that he may not recognize in written form. Thus, the examiner pronounces a word and asks the student which picture best relates to the word. The student's Peabody score is calculated in relation to his chronological age; therefore, if he is 17 years old, he is expected to have acquired a particular vocabulary. To fail the examination, Zeller established that a student's score had to fall 18 months below his chronological age. Of the 79 students who were tested in the experimental group, 41 failed. All members of the control group passed.

Purdue Perceptual Motor Survey

Although educated opinion (there is no available research) indicated that college-age students should have overcome or compensated for any perceptual motor problems, personnel from Zeller administered parts of the Purdue Perceptual Motor Survey to our students. The results from our tests indicate just the opposite; however, we are uncertain about the meaning because these tests have never or rarely been given to adults. Specifically, the tests included instruments which measured gross motor movements, particularly bilateral, alternating, and integrative coordination. For fine motor coordination, we tested ocular motility, the ability to move one's eyes smoothly from left to right and in various directions, a vital reading skill.

In general, the personnel from Zeller made these observations about the students. First, they seemed to have great difficulty translating oral instructions into the actions being requested, or it took them an unusual amount of time to do so. For example, when a student was asked to hop on his left foot once, on his right foot twice, and to continue this sequence for a short period of time, often the examiner was required to demonstrate the task so the student could understand what he was to do. Such difficulty in understanding is more common to much younger students, and this problem has special meaning for instructors. For instance, following a lecture would be difficult for these students, and multiple examples and demonstrations would be necessary if they are to understand. Second, as mentioned, the students had significant problems with ocular motility: they were unable to move their eyes smoothly from left to right and from far to near following an object held by the examiner. Because this problem was so prevalent, we assumed that it would appear in members of the control group, but it did not. Of the 76 in the experimental group who took the perceptual motor test, 25 or 33 percent of the students failed.

In addition to the ocular motility testing, we asked each student to reproduce two simple geometric forms—a diamond and a divided rectangle—as another measure of visual perception and fine motor coordination. Since this test is seldom if ever given to adults, the consultant was uncertain about what shapes he should ask the students to reproduce. Therefore, since he had used the diamond and divided rectangle in testing elementary students and because there was research supporting these forms, he decided to use them even though he felt they would probably be too elementary.

As was common in much of the testing during the semester, we discovered many more problems with visual perception than we had anticipated using even these elementary forms.

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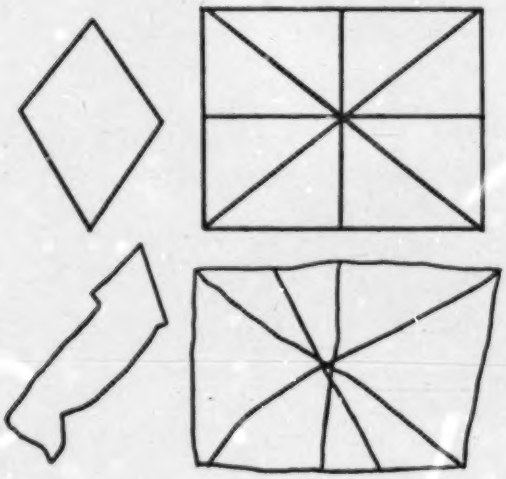
The most serious case is illustrated by the accompanying drawings. The student was shown the diamond and divided rectangle and asked to reproduce them as he saw them. After he had finished, the examiner asked if the reproductions were the same as the originals, and the student thought so. Of the 65 students tested in the experimental group for visual perception problems, 22 or 33 percent failed. All members of the control group passed.



Dominance testing

Zeller was also responsible for tests of dominance, a controversial area in educational research. Dominance refers to the side of the body which a person favors as he functions, and according to some authorities, dominance is established when a child crawls. If a person is right dominated, he is right-handed, right-eyed, and functions best with his right leg. The same is true of people with left dominance—left eye, left leg, and left hand. However, if a student has mixed dominance, he may be right-handed, left-eyed, and favor his left leg. Dominance relates to laterality (being able to distinguish between left and right) or to directionality (one's place in space). If one has not overcome or compensated for a dominance problem, he may be confused internally, may have difficulty giving or following directions, and may have orientation problems in moving his eyes smoothly from left to right, a reading skill.

The significance of mixed dominance for learning is unclear. Apparently, a large number of people have mixed dominance (including some of my colleagues) and are able to function academically without difficulty. Still others seem to be affected by dominance problems, and their academic work suffers because of them. Nevertheless, at this point all we can say is that a number of Developmental students had mixed dominance and none in the control group had it. Of the 69 students tested, 23 had mixed dominance. Of those 23 students, seven dropped before we could evaluate their work, 11 were considered very weak students, and five were regarded as at least average in ability. More than half of those tested either did not know their right hand from their left or they showed great hesitancy when asked to point them out. Obviously, more research must be done in this area before any valid conclusions can be drawn.

Summary

If only one comment can be made about all this testing, I believe we can say, with conviction, that the problems of the academically disadvantaged are much more complicated and varied than most of us have previously believed. Obviously some students improve when their attitude toward education changes and when they mature. But still others need more evaluation before we start teaching them how to improve their math, English, or reading. Trying to teach them the basic learning skills without previously testing them for any physical problem may perhaps be like treating a symptom rather than a cause.

In light of these results, we repeated the test battery in the fall of 1973, to verify whether or not our findings were unique to a certain group of students. Further, we sought a state grant, with the cooperation of Zeller Zone Center, to duplicate our testing at Moraine Valley Community College in Palos Hills. (At this writing no action has been taken on the grant.) Our purpose is to determine if I.C.C. students are unique, or if all the vision difficulties also are common to disadvantaged students in the Chicago area. Finally, these test findings have significantly altered the content of our Developmental courses—no longer do we feed warmed-over transfer material to less than transfer students. And we are continually developing materials which will improve the students' pre-reading and pre-writing skills.